UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,373	01/30/2006	Shugo Nishi	284523US0PCT	2096

22850 7590 01/15/2009

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
ZIMMER, ANTHONY J	
ART UNIT	PAPER NUMBER
1793	

NOTIFICATION DATE	DELIVERY MODE
01/15/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/566,373	NISHI ET AL.	
	Examiner	Art Unit	
	ANTHONY J. ZIMMER	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 October 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kuhlmann (US2002/0102198).

In regard to claims 1-8, Kuhlmann teaches a precipitated (amorphous) silica. See [0001].

Kuhlmann is silent in regard to the properties required by claims 1-8.

However, the process of making the silica of Kuhlmann is substantially similar to the process of making the silica as presented in instant Example 1 (or Example 2). In particular, both processes combine sodium silicate and sulfuric acid, wash and filter the precipitate, add acid to adjust the pH to similar values (instant Example 1 utilized pH of 4; Kuhlmann uses pH of 3-5, see [0021]), and utilize spray drying. See [0016]. Thus since the process of making the silica of Kuhlmann is substantially similar to the instant process of making, the products must also be substantially similar and have

substantially similar properties. See MPEP 2112.01. Kuhlmann teaches a high DBP (oil) absorption value (380-420 g/100g or ~362-400 cm^3/g), see claim 1.

In regard to claims 9 and 10, Kuhlmann teaches using the silica as an adsorbent (carrier) for pharmaceuticals and agrochemicals. See [0026].

In regard to claim 11, the claim only requires the silica as addressed above. Thus, the claim limitations are considered to be met. Furthermore, amorphous silica is routinely used in the art as a matting agent. (See, for instance, US5637636, column 2, lines 35-56.)

Claims 1-4 and 7-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Boyer '298.

In regard to claims 1-4 and 7-8, Boyer teaches a precipitated (amorphous) silica with a pore peak diameter at the maximum of the volume pore size distribution curve in the range of 30-200 nm (a radius of 15-100 nm) and an oil adsorption value of 180-300 $cm^3/100g$. See claim 1.

Boyer is silent to the maximum value of $\Delta Vp/\Delta Rp$ and the values of OI1 and O12. However, the properties of the silica of Boyer, as previously discussed, are substantially similar to those of the instant invention as required by the claims; thus the other properties of the silica of Boyer must also be substantially similar to those of the instant application. See MPEP 2112.01. Furthermore, the process of preparing the silica of Boyer is substantially similar to that of Example 2 of the instant application. In particular, both processes react sodium silicate with acid under shearing forces at similar

temperatures (95°C in instant Example 2 and 91-100°C in Boyer), aging (holding the temperature for a time), adjusting the pH (to similar levels), filtering, washing, drying (spray dying), and pulverization. See column 6, line 59 - column 8, line 2. Thus, since the processes of making the silicas are substantially similar, the products would also be substantially similar. See MPEP 2112.01.

In regard to claims 9 and 11, Boyer teaches using the amorphous silica as a matting agent in a battery separator. See column 1, lines 5-16. Furthermore, amorphous silica is routinely used in the art as a matting agent. (See, for instance, US5637636, column 2, lines 35-56.)

In regard to claim 10, the claim only requires the silica as addressed above. Thus, the claim limitations are considered to be met.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5-6 and 9-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Boyer, as applied to claims 1-4 above, further in view of Kuhlmann.

In regard to claims 5-6, Boyer fails to teach a silica with an oil adsorption in the range of the claims. However, it would have been obvious to one of ordinary skill in the art to modify Boyer in view of Kuhlmann because Kuhlmann teaches that the oil absorption property of amorphous silica is affected by the pH of the silica and that pH can be adjusted by utilizing ammonia gas. See [0023]-[0024]. Thus, the oil absorption capacity is a matter of design choice and routine optimization that fails to produce an unexpected result.

In regard to claims 9-10, Boyer is silent in regard to using amorphous silica as an adsorbent for pharmaceuticals or agrochemicals; however, Kuhlmann teaches using amorphous silica as an adsorbent (carrier) for pharmaceuticals and agrochemicals. See [0026]. Thus, employing the amorphous silica of Boyer in a known use for amorphous silica in the art would have been obvious to one of ordinary skill.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29

USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1–11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 and 9-116 of copending Application No. 10/567082. Although the conflicting claims are not identical, they are not patentably distinct from each other because Claims 1-3 of 10/567082 contain all of the limitations required by instant claims 1-6. Claims 13-15 of 10/567082 contain all of the limitations required by claims 9-11 of the instant application. Though the limitations of instant claims 7-8 are not mentioned in the claims of 10/567082, the silica of 10/567082 would necessarily have the OI1 and OI2 values required by instant claims 7-8 because properties of the silica presented in claims 1-3 of 10/567082 are substantially similar to that of the silica in instant claims 1-6. Thus, other properties of the silicas, such as those required by claims 7-8 must also be substantially similar. See MPEP 2112.01.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

Applicant's arguments filed 10/2/2008 have been fully considered but they are not persuasive.

In regard to Kuhlmann

Applicant argues that Kuhlmann does not inherently teach the instant product because the processes of Kuhlmann and the instant application differ.

However the processes do not differ in a way that would cause a difference in properties. It is also noted that applicant has chosen to compare the process of Kuhlmann with the specific embodiments (Examples 1 and 2) when the instant application discloses a much more broadly defined process to which Kuhlmann closely coincides.

Applicant points out the following process differences allegedly leading to a different product:

1. Precipitation Step

Applicant argues that Kuhlmann teaches the combination of sulfuric acid and sodium silicate simultaneously, when the instant application teaches adding sulfuric acid to a sodium silicate solution. However both processes achieve the same end of combining the two solutions in a controlled manner to produce a precipitate. Applicant has not established that the method of combining the two substances materially changes the product, and the instant specification does not teach the criticality of this step, instead generally prescribing neutralizing an alkaline silicate solution with an acid, a prescription which is achieved by the process of Kuhlmann. See instant [0025].

2. Temperature at precipitation (step 1)

Applicant argues that Kuhlmann teaches a 34-45°C precipitation step and the instant application teaches 95°C. The instant specification discloses that temperatures over 30°C can be used. See [0025].

3. Aging after Precipitation

Applicant points out differences in the aging step in which Kuhlman teaches 35-40°C [a range of 35-45°C is disclosed, see claim 1 of Kuhlmann] for 60-120 minutes and the instant application teaches no aging in example 1 or 95°C for 90 minutes in example 2. It is apparent from the wide range of aging conditions presented in the instant application that the aging conditions, if any, are not critical to producing the instant product. Thus differences in this regard in the process of Kuhlmann would not affect a different product. Moreover, the instant application teaches that aging temperatures of 50-130°C and times of 3-180 minutes can be used. See instant [0025]. The time range of Kuhlmann falls within this embodiment and the temperature range of Kuhlmann does not significantly deviate from that used in the instant invention as a 5°C temperature difference in an aging process is not enough to cause a significant change in properties.

Furthermore, and even furthering the conclusion reached above that the products are the same, the product of Kuhlmann appears to be the substantially identical to that of that instantly claimed in terms of known properties, and thus other non-mentioned properties must also be substantially identical. See MPEP 2112.01. For instance the surface area, oil absorption, and density of Kuhlmann fall within the ranges instantly

disclosed. Compare claims 1-4 of Kuhlmann with instant [0043]. The burden is on applicant to show an unobvious difference. See MPEP 2112.

A *prima facie* case of inherency can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. See MPEP 2112.01. No evidence in this regard has been presented. Applicant refers to comparison Example 3 and SIPERNAT® 50S by Degussa. However, SIPERNAT® 50S is not the same product as the silica of Kuhlmann, as the DBP values (the values of which depend on pore properties) are not the same. Thus such a comparison is not valid in determining a difference in pore properties between the product of Kuhlmann and that of the instant application. It should also be noted that attorney arguments cannot take the place of evidence in showing unexpected results or the inoperability of prior art. See MPEP 716.01(c).

Applicant also argues unexpected results.

However applicant has failed to show unexpected results over Kuhlmann because the product of Kuhlmann has not been compared to the instant product.

In regard to Boyer

Applicant argues that Boyer does not inherently teach the instant product because the processes of Boyer and the instant application differ.

However the processes do not differ in a way that would cause a difference in properties. It is also noted that applicant has chosen to compare the process of Boyer

with the specific embodiments (Examples 1 and 2) when the instant application discloses a much more broadly defined process to which Boyer closely coincides.

Applicant points out the following process differences allegedly leading to a different product:

1. Precipitation Step

Applicant argues that Boyer teaches the combination of sulfuric acid and sodium silicate simultaneously, when the instant application teaches adding sulfuric acid to a sodium silicate solution. However both processes achieve the same end of combining the two solutions in a controlled manner to produce a precipitate. Applicant has not established that the method of combining the two substances materially changes the product, and the instant specification does not teach the criticality of this step, instead generally prescribing neutralizing an alkaline silicate solution with an acid, a prescription which is achieved by the process of Boyer. See instant [0025].

2. Electrolyte Present at beginning of Precipitation

Applicant argues that sodium silicate present at the beginning of precipitation is not present in the instant application, thus leading to a different product. However, in the instant process when sulfuric acid and sodium silicate are initially combined, they react to produce sodium sulfate, which is thus present at the beginning of precipitation. Also, in aqueous solutions, such ions as sodium and sulfate are disassociated. Therefore, even at the very initial contact of sodium silicate and sulfuric acid in the instant process, sodium silicate is present. Thus the processes are not seen to be substantially different in this regard. Also the products appear to be the same in terms of known properties

and thus unknown properties would also be substantially identical. See MPEP 2112.01. The burden is on applicant to show an unobvious difference. See MPEP 2112.

3. Aging after Precipitation

Applicant points out differences in the aging step in which Boyer teaches 95°C for 70 minutes, instant example 1 discloses no aging, and instant example 2 teaches 95°C for 90 minutes. However the instant application discloses that times from 3-180 minutes can be used. See instant [0025]. Also, it is apparent from the wide range of aging presented in the instant application that the aging conditions, if any, are not critical to producing the instant product. Thus differences in this regard in the process of Boyer would not produce a different product. Applicant has not shown otherwise.

4. Second precipitation step

Applicant argues differences in the second precipitation step. However it is clear that the second precipitation step is not critical to producing the instant product as, for instance, the second precipitation step is not used in Example 1. Thus differences in this regard in the process of Boyer would not produce a different product. Applicant has not shown otherwise.

Furthermore, and even furthering the conclusion reached above that the products are the same, the product of Boyer appears to be substantially identical to that of the instant application in terms of known properties, and thus other non-mentioned properties must also be substantially identical. See MPEP 2112.01. For instance the surface area, oil absorption, and pore diameter of Boyer fall within the ranges instantly disclosed. Compare claim 1 of Boyer with instant [0043].

A *prima facie* case of inherency can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. See MPEP 2112.01. No evidence in this regard has been presented. It should also be noted that attorney arguments cannot take the place of evidence in showing unexpected results or the inoperability of prior art. See MPEP 716.01(c).

Applicant also argues unexpected results. However applicant has failed to show unexpected results over Boyer because the product of Boyer has not been compared to that instantly claimed.

Applicant argues that Boyer is not combinable with Kuhlmann because Boyer teaches away from changing oil absorption above 300 cm^2/g because Boyer teaches a range of 180-300 cm^2/g, preferably 180-260 cm^2/g.

However this disclosure does not constitute a teaching away from changing the oil absorption because it does not criticize, discredit, or otherwise discourage increasing the oil absorption, which one of ordinary skill in the art would find desirable. See MPEP 2143.01. Also disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. See MPEP 2123.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. ZIMMER whose telephone number is (571)270-3591. The examiner can normally be reached on Monday - Friday 7:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ajz

/Steven Bos/
Primary Examiner, Art Unit 1793